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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SON, LINH L D

ART UNIT PAPER NUMBER

2135

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/784,893	Applicant(s) PETING ET AL.	
	Examiner Linh LD Son	Art Unit 2135	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2001.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7 and 12-23 is/are pending in the application.
 4a) Of the above claim(s) 12-23 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 24 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Applicant elected group 1, claims 1, and 3-7 without traverse in paper dated 07/05/05.
2. Claims 12-23 are withdrawn as being non-elected claims.
3. Claims 1, 3-7, and 12-23 are pending.

Drawings

4. The informal drawings are not of sufficient quality to permit examination. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit replacement drawing sheets will result in ABANDONMENT of the application.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong (cited in PTO-890 dated 08/04/04), in view of Yang et al, US Patent No. 5451936, hereinafter "Yang".

7. As per claims 1 and 7, Wong discloses "A bit level permutation apparatus comprising: a plurality of switches each having a first input terminal, a second input terminal, a first output terminal and a second output terminal, each of the plurality of switches (Col 4 lines 18-48) having a pass-through state in which data Input to the first input terminal is passed to the first output terminal and data input to the second input terminal is passed to the second output terminal, and a cross-over state in which data input to the first input terminal is passed to the second output and data input to the second input terminal is passed to the first output terminal (Col 5 lines 4-13), the plurality of switches interconnected to provide, at the output terminals of the plurality of switches, permutations of signals bits received via the input terminals of the plurality of switches" (Col 4 lines 10-17, and Col 5 lines 63 to Col 6 line 5). However, Wong does not directly teach the broadcast state, wherein one or more of the plurality of switches has a broadcast state in which data input to one of the first input terminal and the

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second input terminal is passed to both the first output terminal and the second output terminal. Wong does disclose the fan-out non-blocking state, which is one to many connections (Col 8 lines 35-67). Nevertheless, Yang does disclose the "Non-Blocking Broadcast Network" invention, which includes the broadcast state specifically in (Col 4 lines 16-26, Col 6 lines 11-26, Col 6 line 58 to Col 7 line 6, Col 8 lines 15-35, and Col 9 lines 1-27). Therefore, it would have been obvious at the time of the invention was made for one having ordinary skill in the art to incorporate the broadcast state with the Benes network in Wong's invention to provide one input to many outputs switching capability.

8. As per claim 3, Wong and Yang discloses the apparatus and the method of claims 1. However, Wong does not directly teach the plurality of switches comprise 352 switches coupled as 32 by 11 array to provide a 64-bit Benes fabric. Nevertheless, Wong does teach an example of an 8x8 Benes network which produce 4 bits output permuted in 5 levels of switches (Col 5 lines 25-62). Further, Wong notes many variants of the Benes Network with arbitrary numbers of inputs and a proportional number of switch cells. The number of input and output bits equal to the number of switch cells divide by two. Therefore, it would have been obvious at the time of the invention was made for one have ordinary skill in the art that the 64 bits permutation requires 32 switches and the 11 levels of permutation is an optimum level number that can be obtained by one having ordinary skill in the art.

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9. As per claim 4, Wong discloses "The apparatus of claim 1 wherein one or more of the plurality of switches comprises: a first multiplexer coupled to the first input terminal and to the second input terminal to receive signals from the first Input terminal and the second input terminal, the first multiplexer to pass signals from the first Input terminal and the second input terminal to the first output terminal: and a second multiplexer coupled to the first input terminal and to the second input terminal to receive signals from the first input terminal and the second input terminal, the second multiplexer to pass signals from the first input terminal and the second input terminal to the second output terminal" in (Col 5 lines 14-25).

10. As per claim 5, Wong discloses "The apparatus of claim 4 further comprising a control line to provide a control signal to the first multiplexer and to the second multiplexer such that when the control signal is in a first state the first multiplexes passes signals from the first input terminal to the first output terminal and the second multiplexer passes signals from the second input terminal to the second output terminal and when the control signal is in a second state the first multiplexer passes signals from the second input terminal to the first output terminal and the second multiplexer passes signals from the first input terminal to the second output terminal" in (Col 5 lines 14-25, and Col 5 line 63 to Col 6 line 5).

11. As per claim 6, Wong discloses "The apparatus of claim 1, wherein the plurality of switches are independently configurable" in (Col 5 line 63 to Col 6 line 5).

Conclusion

12. Applicant has amended claims 1, and 3-7 in the amendment filed 2/17/05, which necessitated new grounds of rejection. See Rejections above.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

14. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh LD Son whose telephone number is 571-272-3856. The examiner can normally be reached on 9-6 (M-F).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Linh LD Son
Examiner
Art Unit 2135



KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100